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THE AMERICAN BOY AND THE AMERICAN MECHANIC.

BY REAR-ADMIRAL GEORGE W. MELVILLE, U.S.N. (RETIRED).

AMERICANS are frequently taken to task by people of other nationalities for boasting about their country; and indeed, with a country possessed of the greatest natural advantages, a mixed breed of men, originally of the best and the bravest, and the best form of government which has thus far been devised, it would seem that our pride is not without justification. In recent years, however, a note of warning has been raised by careful observers on the material side of things, and these warnings finally culminated in the Congress of Governors held at the White House under the auspices of ex-President Roosevelt. At this Congress the necessity for economy in the use of our natural resources was most strongly emphasized, and it was pointed out very clearly that we could not hope to maintain our pre-eminent position in the world if we continued to deal with the material gifts of nature in such a spendthrift fashion as has been our custom up to the present time.

Every sincere patriot will commend most heartily this attention to our material welfare; but it seems to me that there is a personal element which is of even greater importance, the neglect of which will bring about our national decadence just as surely as the waste of natural resources.

As I read history, the nations which have neglected the nurture of the skilled artisan have finally met with disaster or fallen into decay; this, of course, presupposes that the development of the mechanical arts is not coincident with a loss of manly courage, as was the case when the Turks destroyed the Roman Empire in the east and the Goths destroyed it in the west. In recent times, certainly, we have had a marked illustration of the correctness

of this statement in our own Civil War, the mechanical arts having been almost entirely neglected by the South; and, more recently, in the war with Spain, where a vital factor in the collapse of the Spanish Navy was their incompetence as mechanics.

I am proud of the fact that I have been a mechanic all my life. I started as an apprentice; and, after completing the course, took up the mechanical side of the military profession as an engineer in the Navy. This means that I have been in close touch with the mechanic and his work for fifty years and have studied the question from all sides. In my younger days the skill of the American mechanic was the subject of frequent praise, which was thoroughly merited. I do not believe there ever was a more skilful lot of mechanics than those who were born in this country and passed through the usual apprenticeship fifty years ago or more. They were ready to turn their hands to anything, and the great mass of inventions which are proving so useful to-day is the fruit of their work. In recent years, however, I have noticed with great regret that our machine-shops and manufacturing establishments are coming to depend more and more on mechanics of foreign birth, who received their training before coming to this country. While immigration has been very large, the skilled mechanics have certainly not formed the bulk of it, and the reason for the reduction in the percentage of native-born American mechanics must be sought elsewhere. One very important cause is the limitation of the number of apprentices which has been brought about by the action of the Trades Unions. Many other observers have called attention to this condition, and have pointed out the folly of American workmen in deliberately preventing their boys from qualifying themselves for a good position in life by becoming expert craftsmen. The immigration of skilled foreign workmen is not limited in any way (and I would not for a moment advocate any such limitation); but the Trades Union leaders, with that fatuity which seems to have always accompanied such organizations, have tried to keep the number of skilled workmen at a minimum by restricting the training of American boys as apprentices. The foreign workman joins the Union and becomes a very active member of it, in many cases being the very one to prevent the American boy from exercising that liberty of which we are all so fond of talking. In the early days of the Republic, the business man used to boast that he had learned a

trade to fall back on in case of failure in his business pursuit. Many of our greatest men learned trades in their youth.

That the apprenticeship question is one of tremendous importance is shown by the substitutes which have been attempted by patriotic and benevolent citizens, who realize the necessity of skilled workmen of native birth, and who, to avoid the constant fight with the Unions, have attempted to get the final result in another way by establishing various forms of Trade Schools. I have no doubt that, so far as instruction is concerned, from the scientific standpoint, the Trade Schools do more for the boy than the old form of apprenticeship where there was no systematic curriculum and where the apprentice had to pick up what he learned. There is one great danger, however, in all schools where the primary aim is instruction rather than, as in a real factory, production. There is a strong tendency for the boys to forget that they are to be trained for handicraftsmen and to dream of becoming engineers or gaining some other position where they will not have to work with their hands.

Now, I would be the very last person in the world to discourage a boy's ambition; if he has it in him to rise to a higher position, well and good. At the same time, there is no doubt whatever that his thorough training as a skilled workman will give him a foundation for professional work which it is hard to over-estimate. As a matter of fact, a skilled workman to-day in the majority of trades can earn more money than the average clerk; and, if he has been properly trained, he will be proud of his work.

I am not altogether prepared to outline a complete scheme of apprenticeship; but I do believe that there should be no limitation as to the number of apprentices, and further that their training in the shop work should be in a shop or factory where work is done for a profit. I know that various methods are being tested somewhat along this line—notably a recent scheme in Cincinnati for the education of young engineers, where the theoretical work of the course is done in the college but the training in the use of tools is a part of the regular shop system.

Several of our largest manufacturing firms have very complete apprenticeship courses, but these are to give shop training to college graduates who are to occupy high positions in the office force. Some have also courses to teach boys the trade, and this is the particular work which I am now discussing. In some instances,

these courses are very carefully laid out and are under the special care of a superintendent chosen for his ability in this line. The fact, however, that these special cases stand out so prominently only serves to emphasize the point I am making, that the training of lads to become skilled mechanics is no longer a regular part of the work of every shop, but that it has become moribund, until the more progressive managers have waked up to the fact that they must provide for the future.

I do not want to be unfair to the Trades Unions, and undoubtedly they are not alone to blame. The growth of large factories, where automatic machinery enables an untrained man to acquire quickly the ability to be a machine-tender, and where there is so much work for each class of machine that even a highly skilled man passes all his life handling one kind of machine, has led managers who are thinking only of profits (and most of them are driven to this by non-technical Boards of Directors) to plan only for the present and to fill their shops with any workmen who can handle the machines. In the long run, however, such a course cannot succeed.

There is still another aspect of this subject which merits attention and which, as time goes on, may become serious. In a Republic like ours, where efficiency depends on the intelligence of the electorate, it has rightly been deemed of vital importance that the education of the children should receive most careful attention. "The little log schoolhouse" is most affectionately remembered, and many of our great men received most of their instruction in such humble places. With increased wealth, the public schools have extended their curriculum until the higher grades are giving what was a college course not many years ago. It goes without saying that a successful professional man stands higher socially and is better off financially than the skilled mechanic. Naturally, therefore, if it is made very easy for the boy to get such an education, the parents are tempted to sacrifice themselves to help him to get it, the result being that too many men with professional training are turned out for whom there is nothing to do. In the language of Scripture: "He cannot dig; to beg he is ashamed." In other words, many successful mechanics are lost in the unsuccessful professional men. The way to the professions should not be made too easy. Ambitious boys, who will make a success, will make personal sacrifices and

do the hard work necessary. What we must guard against is making the securing of a higher education so easy as to encourage boys to take it who have not the qualifications to succeed.

This is not a novel thought, by any means. That eminent educator, Goldwin Smith, who was one of the famous faculty at the founding of Cornell University, after many years' experience as a teacher, and with the heartiest sympathy for making education as far-reaching as possible, announced some years ago that he had very reluctantly reached the conclusion that it was a mistake to make it too easy for all to have university training. A practical illustration of this very point was called to my attention some years ago by a very keen Scotch engineer who had spent a long time in Greece. In that small country it is very easy for almost any boy to go to the university, with the result that there is a superabundance of lawyers. As there is not enough regular business for them they drift into politics.

At the Conference of Governors, Mr. James J. Hill called attention to the inefficient way in which agriculture is prosecuted in our country; and it seems to me that something of the same sort is true about our manufacturing when we are neglecting this vital element of the proper training of young men to fill the places of the older ones. Our country is becoming more and more a manufacturing country, and, that being the case, the natural calling of a large proportion of our boys should be in the mechanical arts. If we permit a policy to obtain which will prevent the American boy from exercising his inherent liberty of choosing a trade and constantly depend largely for skilled mechanics on foreign immigration, a large part of our boys will be driven into the ranks of unskilled laborers; and if we foolishly encourage boys who ought to be mechanics to try to become professional men, we shall simply breed petty clerks and loafers.

No true American can possibly contemplate such a condition of affairs without serious apprehension, and I have written this brief article in the hope of attracting still greater attention to the subject, especially as the views expressed come from one whose active work is nearly over, who has no personal interest in the matter whatever, and who is actuated only by pride in the work to which his life has been given and by love of his native land.

GEORGE W. MELVILLE.